

TELICOTA BAMBUSÆ Moore. ♂. H.

CALTORIS TOONA Moore. ♀.

CALTORIS BADA Moore. ♂.

LAMBRIX SALSALA Moore. ♂.

UDASPES FOLUS Cram. ♂. H.

ASTICTOPTERUS OLIVASCENS Moore. ♂.

ISMENE ATAPHUS Watson. ♂.

EXPLANATION OF PLATE XXXV.

Fig. 1. *Eulepis eudamippus whiteheadi*, p. 506.

2. *Hipocritia lageloides*, p. 509.

3. *Papilio hamela*, p. 509.

4. *Kirontisa whiteheadi*, p. 506.

4. List of the Fishes collected by Mr. J. S. Budgett in the River Gambia. By G. A. BOULENGER, F.R.S., F.Z.S. With Notes by J. S. BUDGETT, F.Z.S.

[Received May 8, 1900.]

The collection made by Mr. Budgett fills a gap in our knowledge of the African river-fishes. Extraordinary as it may appear, the fishes of the Gambia have been little collected before, and it would have been impossible to draw up a list complete enough to compare with that of the Senegal. As might be expected, the fishes are very similar in the two rivers; I have nevertheless to describe as new two species, which are represented by several specimens in the collection. Mr. Budgett intends to present examples of these to the British Museum.

CROSSOPTERYGII.

POLYPTERIDÆ.

1. POLYPTERUS LAPRADII Stdr.
2. POLYPTERUS SENEGALUS Cuv.

DIPNOI.

LEPIDOSIRENIDÆ.

3. PROTOPTERUS ANNECTENS Ow.

[On this and the two preceding species, see Mr. Budgett's notes in Proc. Cambr. Philos. Soc. x. 1900, p. 236.]

TELEOSTEI.

ELOPIDÆ.

4. *ELOPS LACERTA* C. & V.

MORMYRIDÆ.

5. *MORMYROPS DELICIOSUS* Leach.

"Known as 'Suyi.' The natives are fond of all the Mormyridæ as food."

6. *GNATHONEMUS SENEGALENSIS* Stdr.

"Called by the natives 'Suyi-furu.' Brazen, blue and pink sheen."

7. *MORMYRUS JUBELINI* C. & V.

"Known as 'Suyi-nala.' All the Mormyridæ are easily caught with the trammel net, but with difficulty by other means."

8. *HYPEROPISUS BEBE* Lacép.9. *GYMNARCHUS NILOTICUS* Cuv.

"Only caught in the Kunchow creek. Five specimens seen."

NOTOPTERIDÆ.

10. *NOTOPTERUS AFER* Gthr.

"This is not common. Its native name is 'Liffi lafo.' Two specimens only were taken near McCarthy's Island."

OSTEOGLOSSIDÆ.

11. *HETEROTIS NILOTICUS* Cuv.

"Native name 'Fanntang.' Breeds in the swamps; the fish occurs also in the river. I have seen no specimen over 20 inches."

CHARACINIDÆ.

12. *SARCODACES ODOË* Bl.

"Known by the natives as 'Saunko.' It was taken several times at Niadimaru, 130 miles from the sea."

13. *HYDROCYON BREVIS* Gthr.

"Native name 'Sokkoro.' Very common; a specimen was found with a large *Alestes* in its gullet. Ventral lobe of caudal fin brilliant red. Used by the natives for food."

14. *ALESTES DENTEX* Hasselq.15. *ALESTES SETHENTE* C. & V.

"Known as 'Ballauta.' Everywhere common, largely eaten and used as bait. The scales have a sky-blue tint, tail bright red."

16. *ALESTES LEUCISCUS* Gthr.17. *CITHARINUS GEOFFROYI* Cuv.

"Known as 'Tara.' Very common, 12 inches in length. The ventral lobe of the caudal fin and the ventral fins bright red, the rest silver grey."

CYPRINIDÆ.

18. *LABEO COUBIE* Rüpp.

"Known as 'Kulinumma.' The whole fish has a fine rosy tint; it is esteemed as food, and fairly common; the largest seen being about 18 inches in length."

19. *LABEO SELTI* C. & V.

"Known as 'Jotto.' Fairly common at McCarthy's Island. It is good eating. Silver white."

SILURIDÆ.

20. *CLARIAS BUDGETTI*, sp. n.

Vomerine teeth granular, forming a crescentic band which is as broad as or a little narrower than the præmaxillary band; the latter about 7 times as long as broad. Depth of body $6\frac{1}{2}$ or 7 times in total length, length of head (to extremity of occipital process) 3 or $3\frac{1}{4}$ times. Head $1\frac{1}{2}$ or $1\frac{1}{3}$ as long as broad, very feebly granulate; occipital process angular; frontal fontanelle 4 or 5 times as long as broad, its length about 4 times in length of head; occipital fontanelle small, in advance of occipital process; eye small, 3 or 4 times in length of snout, $5\frac{1}{2}$ to 7 times in interorbital width, which nearly equals width of mouth and is contained $2\frac{1}{3}$ or $2\frac{1}{2}$ in length of head; nasal barbel about $\frac{1}{2}$ length of head; maxillary barbel as long as or a little shorter than the head (a little longer in the young); outer mandibular barbel $1\frac{1}{4}$ or $1\frac{1}{3}$ as long as inner, which measures $\frac{1}{2}$ or $\frac{2}{3}$ length of head. Gill-rakers closely set, about 40 on first arch. Dorsal 68 to 73, its distance from the occipital process $\frac{1}{6}$ or $\frac{1}{7}$ length of head, its distance from the caudal fin greater than the diameter of the eye. Anal 46 to 50, narrowly separated from the caudal. Pectoral not quite $\frac{1}{2}$ length of head; the spine serrated on the outer border, about $\frac{1}{2}$ length of the fin. Ventrals midway between end of snout and caudal. Caudal $\frac{1}{2}$ length of head. Olive above, marbled with black, white beneath; anal with a light edge; a blackish streak from the angle of the mouth to the base of the pectoral.

Total length 330 millim.

Three specimens.

Very nearly allied to *C. senegalensis* C. & V., with which it may ultimately have to be united. The less rugose head and the narrower frontal fontanelle are the characters which induce me to regard it, provisionally, as distinct.

"Called 'Connococono' by the natives. Often eaten by natives but not much esteemed. Lives chiefly in shallow swamps."

21. *SCIIILBE SENEGALENSIS* C. & V.

22. *ARIUS LATISCUTATUS* Gthr.

“Known as ‘Wollinyaba.’ It is used as food. Seen two feet in length.”

23. *CHRYSICHTHYS CAMERONENSIS* Gthr.

24. *CHRYSICHTHYS NIGRODIGITATUS* Lacép.

25. *AUCHENOGLANIS BISCUTATUS* Geoffr.

26. *SYNODONTIS CLARIAS* Hasselq.

“Not very common; taken several times at Nianimaru. Brilliant red tail and a little red near the head. Native name ‘Konn-krikong.’ Not used as food.”

27. *SYNODONTIS GAMBIENSIS* Gthr.

“Called by the natives ‘Kosso.’ Was very abundant in the river. Frequently when taken from the water made a faint cry. It is seldom eaten by the natives. Dull grey.”

28. *SYNODONTIS OCELLIFER*, sp. n.

Præmaxillary teeth in several irregular series, forming a broad band; mandibular teeth 23 to 30, hooked, simple, measuring barely one sixth the diameter of the eye. Depth of body 3 times in total length, length of head $3\frac{1}{2}$ times. Head slightly longer than broad, convex on the occiput; snout obtusely conical, $\frac{1}{3}$ length of head; eye supero-lateral, its diameter 5 times in length of head, $1\frac{2}{3}$ to $1\frac{3}{4}$ in interorbital width; upper surface of head moderately granulate from between the eyes; frontal fontanelle narrow. Occipito-nuchal shield obtusely tectiform, longer than broad, granulate like the upper surface of the head, and terminating in two obtuse processes. Gill-cleft not extending below base of pectoral. Maxillary barbel without distinct fringe, longer than the head, reaching middle or posterior third of pectoral spine; mandibular barbels with long, slender, simple branches, inserted on a straight transverse line, outer nearly as long as the head, once and two thirds as long as inner. Lips rather feebly developed. Humeral process granulate, acutely pointed, extending nearly as far as occipito-nuchal shield. Dorsal II 7; spine strong, a little shorter than the head, curved, striated, with 12 or 13 feeble serræ behind in its upper half. Adipose fin 3 to $3\frac{1}{2}$ times as long as deep, a little longer than the head, 4 to 5 times as long as its distance from the dorsal. Anal IV 7-8. Pectoral spine slightly longer than dorsal, striated, feebly serrated on the outer edge, with 18 to 21 strong antrorse serræ on the inner edge. Ventral not reaching anal. Caudal deeply forked, with pointed lobes, upper longest. Caudal peduncle as long as deep. Skin of body smooth. Grey-brown above and on the sides, white beneath; body and adipose fin with large black-and-white ocellar spots

disposed with greater or less regularity at considerable intervals ; caudal fin with numerous small round blackish spots.

Total length 490 millim.

Three specimens.

This species is most nearly allied to *S. nigrita* C. & V., from the Senegal, from which it differs, however, in the larger adipose fin and the longer and more slender branches of the mandibular barbels, as well as in the presence of the ocellar spots on the body.

"Never found in main river ; chiefly taken in the Kunchow Creek. Eye-spots very bright black with white centre. Upper parts brown."

29. MALOPTERURUS ELECTRICUS Gm.

"Is known to the natives of the Gambia by the name of 'Tingo.' It is common. The largest specimen seen was 14 inches in length. Two small specimens 3 inches in length were kept alive for several weeks in an aquarium ; they appeared to browse on the algæ, and were capable when even so small of giving a very considerable shock."

MUGILIDÆ.

30. MUGIL FALCIPINNIS C. & V.

"Taken frequently in the Kunchow Creek. No fish in the river can compare with this as food, most of the river-fish being soft-fleshed and tasteless."

POLYNEMIDÆ.

31. POLYNEMUS QUADRIFILIS C. & V.

SPHYRÆNIDÆ.

32. SPHYRÆNA GUACHANCHO C. & V.

OPHIOCEPHALIDÆ.

33. OPHIOCEPHALUS OBSCURUS Gthr.

"Called by the natives 'Pattukoma' or 'sleeping-fish,' from a curious habit it has when caught in shallow pools by draining the water : it does not attempt to get to the deeper parts of the pools but lies stranded as though dead. If placed in deep water it will suddenly dart away. In these pools it bears from above a striking resemblance to *Polypterus*, with which it is generally found."

GOBIIDÆ.

34. ELEOTRIS SENEGALENSIS Sldr.

CARANGIDÆ.

35. TRACHYNOTUS OVATUS L.

SCIÆNIDÆ.

36. CORVINA NIGRITA C. & V.

CICHLIDÆ.

37. HEMICHROMIS FASCIATUS Pts.

38. PELMATOCHROMIS JENTINKI Stdr.

39. TILAPIA GALILÆA Gm.

40. TILAPIA LATA Gthr.

“Known as ‘Furu.’ Much esteemed as food. Very common, the largest seen being 10 inches in length; great numbers taken with the seine-net. They are chiefly found in shallow water.”

PLEURONECTIDÆ.

41. CYNOGLOSSUS SENEGALENSIS Kaup.

“Native name ‘Juso’ (heart). Taken from above McCarthy’s Island.”

May 22, 1900.

Dr. ALBERT GÜNTHER, F.R.S., Vice-President, in the Chair.

The Secretary announced that Mr. J. S. Budgett, F.Z.S., had left Liverpool on Saturday the 19th inst., on a second expedition to the Gambia, where he was proceeding in order to complete his studies of the Fish-fauna of that Colony, and especially to investigate the life-history and development of the remarkable Fishes *Polypterus* and *Protopterus*. On reaching Bathurst Mr. Budgett would go up the river to his former quarters on McCarthy’s Island, in the neighbourhood of which he had already ascertained that these fishes breed during the rainy season.

A communication was read from Prof. G. B. Howes, F.R.S., and Mr. H. H. Swinnerton, B.Sc., on the development of the skeleton of the Tuatera, *Sphenodon (Hatteria) punctatus*, which was stated to be the outcome of 18 months’ work on material supplied to the authors by Prof. Dendy, of Christchurch, N.Z. An account was given of the egg, the hatching, and the habits of the hatched young, which the authors reared till four months old. Thus a stage (T) was added to Prof. Dendy’s series.

The main conclusions arrived at were stated to be as follows:—

Two kinds of inter-centra are formed, of which one persists as the chevrons. The cartilaginous vertebral bodies arise as paired structures, and the intra-vertebral plates are chordal in origin. Inter-vertebral plates are formed in the tail, and the intra-vertebral plates have a special relation to the “splitting” process; also a series of central chordal vesicles is formed at the points of greatest flexibility. The “uncinates” are mostly separate in origin. The